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## ABSTRACT

A method for improving the reliability of an uncooled long reach optical transmitter operating substantially at a predetermined output power. The uncooled long reach optical transmitter in this method includes a laser, an SOA and a modulator. The laser is operated to produce a reduced power laser beam, thereby improving the laser reliability. The SOA bias current is controlled so that the SOA amplifies the reduced power laser beam to substantially maintain the predetermined output power. The SOA is sufficiently long to provide this amplification, while maintaining a reduced current density within the SOA, thereby improving the SOA reliability. Small signal chirp parameters are measured for two bias voltages of the modulator. A linear function of the modulator bias voltage versus temperature is determined. The modulator bias voltage as a function of temperature is adjusted to maintain a constant dispersion penalty for data transmission.